

1    **1. (original)** A method of analyzing a set of assets selected from a plurality of thereof,  
2    historic returns data for the assets of the plurality being stored in storage accessible to a  
3    processor and

4    the method comprising the steps performed in the processor of:

5            receiving inputs indicating assets selected for the set and for each asset, a desired  
6    minimum return;

7            using the historic returns data to determine a probability that at least one of the  
8    selected assets will not provide the desired minimum return indicated for the asset; and

9            outputting the probability.

1    **2. (original)** The method set forth in claim 1 wherein

2            the step of using the historic returns to determine a probability comprises the steps  
3    of:

4            using the multivariate normal distribution for the returns of the assets to determine  
5    the probability that each of the selected assets will provide the desired minimum return;  
6    and

7            determining the probability that at least one of the selected assets will not provide  
8    the desired minimum return from the probability that each of the selected assets will  
9    provide the desired minimum return.

1    **3. (original)** The method set forth in claim 2 wherein:

2            in the step of using the multivariate normal distribution, the probability that each  
3    of the selected assets will provide the desired return is determined using the real option  
4    values of the assets.

1    **4. (original)** A method of optimizing a set of assets, historic returns data for the assets  
2    being stored in storage accessible to a processor and  
3    the method comprising the steps performed in the processor of:

4            receiving inputs indicating a set of scenarios for the set of assets, each scenario  
5    having values which are used in optimizing the set of assets and which vary stochastically  
6    between two extremes and a probability of occurrence for the scenario; and

7           determining weights of the assets in the set such that the worst-case value of the  
8    set of assets is optimized over the set of scenarios.

1   **5. (original)** The method of optimizing set forth in claim 4 wherein:  
2           the worst-case value of the set of assets is the worst-case real option value thereof;  
3    and  
4           the values which are used in optimizing are the mean return and the covariance.

1   **6. (original)** The method of optimizing set forth in claim 4 wherein:  
2           a scenario in the set of scenarios may correspond to the historical returns data for  
3    the assets in the set of assets.

1   **7. (original)** The method of optimizing set forth in claim 4 wherein:  
2           a scenario in the set of scenarios may include certain assets in the set of assets  
3    which are highly correlated.

1   **8. (original)** The method of optimizing set forth in claim 4 wherein:  
2           a scenario in the set of scenarios may correspond to outliers in the historical  
3    returns data.

1   **9. (original)** The method of optimizing set forth in claim 4 further comprising the step  
2    of:  
3           receiving inputs indicating additional constraints to which the set of assets being  
4    optimized is subject; and  
5           in the step of determining weights of the assets, determining the weights subject  
6    to the additional constraints.

1   **10. (original)** A method of selecting a set of assets from a plurality thereof and  
2    optimizing the weights of the assets in the set, historic returns data for assets being stored  
3    in storage accessible to a processor and  
4    the method comprising the steps performed in the processor of:

5           1) selecting a set of assets on the basis of a probability that at least one of the  
6 assets in a selected set will not provide the desired minimum return indicated for the  
7 asset; and  
1           2) optimizing the weights of the assets in the selected set.

1   **11. (original)** The method set forth in claim 10 wherein:

2           the probability that at least one of the assets will not provide the desired minimum  
3 return is determined using the real option values for the assets.

1   **12. (original)** The method set forth in claim 10 wherein:

2           optimizing the weights of the assets is done using the real option values for the assets.

1   **13. (original)** The method set forth in claim 10 wherein:

2           optimizing the weights of the assets is done using robust optimization.

1   **14. (original)** The method set forth in claim 13 wherein:

2           the robust optimization optimizes over a set of user-specified scenarios, each scenario  
3 having values which are used in optimizing the set of assets and which vary stochastically  
4 between two extremes and a probability of occurrence for the scenario.

1   **15. (original)** The method set forth in claim 10 wherein:

2           optimizing the weights of the assets is done subject to a constraint that the probability  
3 that the set of assets yields a desired minimum return is greater than a user-specified value  $a$ .

1   **16. (original)** The method set forth in claim 15 wherein:

2           the optimization is done subject to a plurality of constraints  $(1..n)$ , a constraint  $c_{hi}$  specifying  
3 that the probability that the set of assets yields a desired minimum return that is greater than a user-  
4 specified value  $a_{ir}$ .

1   **17. (previously presented)** The method set forth in claim 15 wherein:

2           optimizing the weights of the assets in the set is done using robust optimization.

1    **18. (original)** The method set forth in claim 17 wherein:

1    **19. (original)** The method set forth in claim 10 wherein:

2            the asset may have a negative weight.

1    **20. (original)** The method set forth in claim 10 wherein:

2            the sum of the weights of the assets in the set may exceed 1.

1    **21. (original)** The method set forth in claim 10 wherein:

2            optimizing the weight of the assets is done subject to one or more additional  
3            constraints.

1    **22. (original)** The method set forth in claim 21 wherein:

2            the additional constraint restricts the sum of the weights of the assets belonging  
3            to a selected subset of the assets in the set.

1    **23. (original)** The method set forth in claim 21 wherein:

2            the additional constraint constrains the weight of an asset such that the amount of  
3            the asset in the set is above a minimum investment threshold.

1    **24. (original)** The method set forth in claim 21 wherein:

2            the additional constraint limits constrains the set's downside risk to be less than a  
3            predetermined value  $b$

1    **25. (original)** The method set forth in claim 24 wherein;

2            the additional constraint is computed from the worst draw-down for each asset.

1    **26. (original)** The method set forth in claim 24 wherein:

2            the additional constraint is computed from the set's average return and standard  
3            deviation.

1    **27. (original)** The method set forth in claim 12 wherein:

2 the method further includes the step of:  
3 receiving an input indicating one of a plurality of objective functions for computing the  
4 real option values for the assets; and  
5 in the step of optimizing the weights of the assets, the optimization is done using the  
6 indicated objective function of the plurality.

1 **28. (previously presented)** The method set forth in claim 12 wherein:  
2 in the step of optimizing the weights of the assets, the objective function is adjusted by  
3 assigning a premium or a discount to the real option value of one or more of the assets.

1 **29. (previously presented)** The method set forth in claim 28 wherein:  
2 the objective function is adjusted to take non-normal returns for the asset into account.

1 **30. (original)** The method set forth in claim 28 wherein:  
2 the objective function is adjusted to take liquidity characteristics of the asset into account.

1 **31. (original)** The method set forth in claim 28 wherein:  
2 the objective function is adjusted to take tax sensitivity of an asset into account.

1 **32. (original)** The method set forth in claim 28 wherein:  
2 the objective function is adjusted to take the length of time an asset has been available  
3 into account.

1 **33. (original)** The method set forth in claim 12 wherein:  
2 the method further includes the step of:  
3 receiving an input indicating one of a plurality of modes of quantifying the risk of an  
4 asset; and  
5 in the step of optimizing the weights of the assets, the optimization is done using the  
6 indicated mode of the plurality.

1 **34. (new)** The method set forth in claim 1 wherein:  
2 the received inputs include a period of time; and

3 the probability is the probability over the period of time.

1 **35. (new)** The method set forth in claim 10 wherein:

2 the probability is the probability over a period of time.